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| 10/807,535   | 03/24/2004  | Naoki Itokawa        | 1466.1088           | 3781             |
| 21171 7590 05/14/2008<br>STAAS & HALSEY LLP<br>SUITE 700<br>1201 NEW YORK AVENUE, N.W.<br>WASHINGTON, DC 20005 |             |                      |                     |                  |
| EXAMINER<br>LEWIS, DAVID LEE   |             |                      |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/807,535

**Applicant(s)**

ITOKAWA ET AL.

**Examiner**

DAVID L. LEWIS

**Art Unit**

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date 4/16/2008
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. **Claims 1-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Mori (6900781).**

**As in claim 1, Mori et al. teaches of** a method for driving a plasma display panel, **figures 4-6 & 11, column 3 lines 19-24,**

comprising: generating wall voltage in cells to be lighted within a screen so that the wall voltage is higher than that in other cells, **column 1 lines 60-67, column 3 lines 35-45;**

detecting a display ratio that is a ratio of the number of cells to be lighted to the number of cells before the application of the display pulse, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-45;**

selecting one display pulse waveform that corresponds to the detection result of the display ratio among plural types of display pulse waveforms in accordance

with a predetermined relationship between a display ratio and the plural types of display pulse waveforms, **column 3 lines 35-65**;

and applying a display pulse having the selected display pulse waveform to all cells after that, so as to generate discharge only in the cells to be lighted, **column 3 lines 35-65**.

wherein one of said plural types of display pulse waveforms has a step-like waveform in which an amplitude of a leading edge and an amplitude of a trailing edge are different, **figure 4, column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65**.

**As in claim 2, Mori et al. teaches of method for driving a plasma display panel, figures 4-6 & 11, column 3 lines 19-24**

comprising: generating wall voltage in cells to be lighted within a screen so that the wall voltage is higher than that in other cells, **column 1 lines 60-67, column 3 lines 35-45**;

converting a frame into a plurality of subframes, **column 8 lines 45-63**;

detecting a display ratio that is a ratio of the number of cells to be lighted to the number of cells for each of the plural subframes, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-45**;

selecting one display pulse waveform that corresponds to the detection result of the display ratio among plural types of display pulse waveforms for each subframe in accordance with a predetermined relationship between a display ratio and the plural types of display pulse waveforms, **column 3 lines 35-65**;

and applying a display pulse having the selected display pulse waveform to all cells so as to display the corresponding subframe, **column 3 lines 35-65**.

wherein one of said plural types of display pulse waveforms has a step-like waveform in which an amplitude of a leading edge and an amplitude of a trailing edge are different, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65**.

**As in claim 3, Mori et al. teaches of a method for driving a plasma display, figures 4-6 & 11, column 3 lines 19-24** panel comprising:

generating wall voltage in cells to be lighted within a screen so that the wall voltage is higher than that in other cells, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65**;

converting a frame into a plurality of subframes, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65**;

detecting a display ratio that is a ratio of the number of cells to be lighted to the number of cells for each of the plural subframes, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65**;

deciding a pulse having a first step-like waveform in which amplitude decreases between a leading edge and a trailing edge as a display pulse for a display of a subframe having a display ratio that is less than a set value, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65**;

deciding a pulse having a second step-like waveform in which amplitude increases between a leading edge and a trailing edge as a display pulse for a

display of a subframe having a display ratio that is larger than or equal to the set value, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

and applying the decided display pulse to all cells so as to display the corresponding subframe, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65.**

**As in claim 4, Mori et al. teaches of**, wherein amplitude of at least one step of the first step-like waveform is equal to amplitude of one step of the second step-like waveform pulse, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65.**

**As in claim 5, Mori et al. teaches of**, wherein each of the first step-like waveform and the second step-like waveform has two steps, amplitude of one of the steps in the first step-like waveform is equal to amplitude of one of the steps in the second step-like waveform, and amplitude of the other step of the first step-like waveform is equal to amplitude of the other step of the second step-like waveform, **figure 4, column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65.**

**As in claim 6, Mori et al. teaches of** a method for driving a plasma display panel, **figures 4-6 & 11, column 3 lines 19-24, comprising:**

generating wall voltage in cells to be lighted within a screen so that the wall voltage is higher than that in other cells, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

converting a frame into a plurality of subframes, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

detecting a display ratio that is a ratio of the number of cells to be lighted to the number of cells for each of the plural subframes, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

deciding a pulse having a rectangular waveform as a display pulse for a display of a subframe having a display ratio that is less than a set value, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

deciding a pulse having a step-like waveform in which amplitude increases between a leading edge and a trailing edge and the maximum amplitude is larger than the amplitude of the rectangular waveform as a display pulse for a display of a subframe having a display ratio that is larger than or equal to the set value, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

and applying the decided display pulse to all cells so as to display the corresponding subframe, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65.**

**As in claim 7, Mori et al. teaches of method for driving a plasma display panel, figures 4-6 & 11, column 3 lines 19-24, comprising:**

generating wall voltage in cells to be lighted within a screen so that the wall voltage is higher than that in other cells, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

converting a frame into a plurality of subframes, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

detecting a display ratio that is a ratio of the number of cells to be lighted to the number of cells for each of the plural subframes, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

deciding a pulse having a rectangular waveform as a display pulse for a display of a subframe having a display ratio that is less than a set value, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

deciding a pulse having a step-like waveform in which amplitude decreases between a leading edge and a trailing edge for a display of a subframe having a display ratio that is larger than or equal to the set value, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

and applying the decided display pulse to all cells so as to display the corresponding subframe, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65.**

**As in claim 8, Mori et al. teaches of a method for driving a plasma display panel, figures 4-6 & 11, column 3 lines 19-24, comprising:**

generating wall voltage in cells to be lighted within a screen so that the wall voltage is higher than that in other cells, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

converting a frame into a plurality of subframes, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

detecting a display ratio that is a ratio of the number of cells to be lighted to the number of cells for each of the plural subframes, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**



deciding a pulse having a step-like waveform in which amplitude changes from a first value to a second value that is smaller than the first value between a leading edge and a trailing edge as a display pulse for a display of a subframe having a display ratio that is less than a set value, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

deciding a pulse having a rectangular waveform whose amplitude is larger than the second value as a display pulse for a display of a subframe having a display ratio that is larger than or equal to the set value, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

and applying the decided display pulse to all cells so as to display the corresponding subframe, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65.**

**As in claim 9, Mori et al. teaches of method for driving a plasma display panel, figures 4-6 & 11, column 3 lines 19-24, comprising:**

generating wall voltage in cells to be lighted within a screen so that the wall voltage is higher than that in other cells, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

converting a frame into a plurality of subframes, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

detecting a display ratio that is a ratio of the number of cells to be lighted to the number of cells for each of the plural subframes;

deciding a pulse having a step-like waveform in which amplitude changes from a first value to a second value that is smaller than the first value between a leading edge and a trailing edge as a display pulse for a display of a subframe having a display ratio that is less than a first set value, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

deciding a pulse having a rectangular waveform whose amplitude is larger than or equal to the second value as a display pulse for a display of a subframe having a display ratio that is larger than or equal to the first set value and less than a second set value that is larger than the first set value, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

deciding a pulse having a second step-like waveform in which amplitude increases between the leading edge and the trailing edge as a display pulse for a display of a subframe having a display ratio that is larger than or equal to the second set value, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

and applying the decided display pulse to all cells so as to display the corresponding subframe, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65.**

**As in claim 10, Mori et al. teaches of a method for driving a plasma display panel, figures 4-6 & 11, column 3 lines 19-24,**

comprising: generating wall voltage in cells to be lighted within a screen so that the wall voltage is higher than that in other cells, **column 1 lines 60-67, column 3 lines 35-45;**

converting a frame into a plurality of subframes, **column 8 lines 45-63;**

detecting a display ratio that is a ratio of the number of cells to be lighted to the number of cells for each of the plural subframes, **column 3 lines 35-65, figure 11 item 70, column 11 lines 30-45;**

determining the number of discharge times for each subframe so that a luminance ratio between subframes becomes a set ratio and power consumption for one frame becomes less than or equal to a set value for each of plural combinations in waveform selection for selecting one of plural types of display pulse waveforms for each subframe, in accordance with a relationship among each of predetermined plural types of the display pulse waveforms, a display ratio, luminance in one discharge and power consumption in one discharge, **column 3 lines 35-65;**

calculating luminance of one frame for each of combinations of the determined waveform selection and the number of discharge times, **column 3 lines 35-65;**

and applying a display pulse having one of plural types of the display pulse waveforms to the cell the corresponding times in a display of each subframe so as to match the combination of the waveform selection having the highest luminance of one frame and the number of discharge times, **column 3 lines 19-65.**

wherein one of said plural types of display pulse waveforms has a step-like waveform in which an amplitude of a leading edge and an amplitude of a trailing edge are different, **figure 4, column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65.**

**As in claim 11, Mori et al. teaches of** wherein the plural subframes are classified into two groups, and the waveform selection is performed for

subframes that belong to one of the groups while the display pulse waveform is fixed for subframes that belong to the other group, **column 4 lines 23-55.**

**As in claim 12, Mori et al. teaches of** a method for driving a plasma display panel having a plurality of cells, **figures 4-6 & 11, column 3 lines 19-24,** said method comprising:

detecting a display ratio according to a number of the cells to be lighted in at least one subframe, **figure 4, column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;** and

selecting a type of a display pulse waveform supplied in a display period of said subframe depending on the detected display ratio, wherein said display pulse waveform is selected from a pulse of a rectangular waveform and a pulse of a step-like waveform in which an amplitude of a leading portion and an amplitude of a trailing portion are different, **figure 4, column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65.**

**As in claim 13, Mori et al. teaches of** a method for driving a plasma display panel having a plurality of cells, **figures 4-6 & 11, column 3 lines 19-24,** said method comprising

detecting a display ratio according to a number of the cells to be lighted in at least one subframe, **figure 4, column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

and selecting a type of a display pulse waveform supplied in a display period of said subframe depending on the detected display ratio from a plurality of waveforms in which an amplitude of a leading portion and an amplitude of a

trailing portion are different, **figure 4, column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65;**

and applying the selected display pulse waveform to all cells so as to display the corresponding subframe, **figure 4, column 3 lines 35-65, figure 11 item 70, column 11 lines 30-65.**

#### Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David L. Lewis** whose telephone number is **(571) 272-7673**. The examiner can normally be reached on MT and THF from 8 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached on **(571) 272-7681**. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571)-273-8300.
3. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Examiner: David L. Lewis

May 12, 2008

/David L Lewis/

Primary Examiner, Art Unit 2629